

Part 2 -- Remarks

This Amendment and Response is responsive to the office action mailed March 23, 2004. In that office action, claims 1-13 were rejected as obvious under 35 U.S.C. 103(a) over Lara et al. (Pub. No. 2003/0041094) in view of Bradley (US 6,665,780).

Reconsideration of these objections and rejections is respectfully requested, with respect to the amended claims 5 and 12 and originally pending claims 1-4, 6-11 and 13.

Obviousness Rejections

The present invention involves updating web pages through a storage area network. Content servers are connected to a shared network to service data access received through the shared network. A data storage network is connected to the content server and to at least one storage device. The content servers service data accesses through the storage by reading the data from the storage device through the storage network. A production server is also connected to the storage network and provides updated data through the storage network to the storage device. One of the advantages of the present invention is that the production server can provide updated data to the storage device through a different path than what is used to by the content servers to send data to the shared network.

Lara discloses a Web service system (Fig. 2) that connects a number of hosts to the Internet. Each of the hosts include at least one Web server, a database and an agent which connects to the Web server and the database and provides an interface between the host and the Web service system. It appears that the agent passes all of the information in and out of the host, including updated information from a content distributor and data sent to the Internet from the Web server. It also appears that the Web server only accesses the database through the agent as well. Lara does not disclose or appear to suggest a storage network. By routing all information to and from

the host through the agent, the Lara system thus creates the bottleneck that the present invention avoids.

Bradley discloses a data mirroring system (Fig. 3B) for protecting critical data by creating multiple copies of the data at different locations. The data mirroring system has a multicast initiator and a multicast group. The multicast initiator holds the data that is to be protected and which is copied to the multicast group. The multicast group consists of multiple storage devices which each receive a copy of the data to be protected from the multicast initiator or another device in the multicast group. The multicast initiator communicates through the network with the multicast group. However, it appears that the Bradley mirroring system accesses the multicast group through a single multicast initiator or storage location, storage A, as shown in Fig. 3B.

Claim 1 requires, in the manner set forth, at least one storage device connected to the storage network, containing current data for the content and from which the content server reads the current data for the content through the storage network.

Neither Lara nor Bradley separately or in combination disclose or appear to suggest a storage network through which a content server reads data. The Web server of Lara reads data from the database through the agent in the host. Replacing the databases of Lara with the storage network of Bradley would not create the device of the present invention because the Web server would still read data from the storage network through the agent, not through the storage network as required in claim 1.

Since Lara and Bradley do not disclose or appear to suggest all of the subject matter required in claim 1, Lara and Bradley does not render claim 1 obvious.

Claim 2 should be patentable in conjunction with claim 1 from which it depends.

Claim 3 should be patentable in conjunction with claim 2 from which it depends.

Claim 4 requires a local network connected between the shared network and the content server, and wherein the production server bypasses the local network when sending the new data through the storage network to the storage device.

Neither Lara nor Bradley appear to disclose or suggest a local network that is bypassed by a production server when sending new data through the storage network to the storage device. Neither Lara nor Bradley appear to disclose or suggest bypassing any sort of network at all. The combination of Lara and Bradley also fail to disclose or suggest this requirement of claim 4.

Since neither Lara nor Bradley disclose or appear to suggest all of the subject matter required in claim 4, claim 4 should therefore be nonobvious and patentable. In addition, claim 4 should be patentable in conjunction with claim 1 from which it depends.

Amended claim 5 requires, in the manner set forth, servicing data accesses from current data by reading the current data for the content with a content server from a storage device across a storage network, transmitting new data from a production server through the storage network to the storage device while bypassing the content server, replacing the current data on the storage device with the new data, and servicing data accesses from the new data by reading the new data for the content with the content server from the storage device across the storage network.

Neither Lara nor Bradley disclose or appear to suggest servicing data accesses from either current or new data by reading the data with a content server from a storage device across a storage network as required in amended claim 5. If the Bradley storage network were substituted for the databases of Lara, as asserted, the combination would still not provide all of the material required in amended claim 5, because the combination would not service data accesses by reading data with a content server from a storage device across a storage network.

Moreover, replacing the databases of Lara with the storage network of Bradley would not be obvious because it would not provide the beneficial result of providing different paths for data sent to the shared network and updated data sent to storage which is obtained by the present invention. The Lara device updates data in the databases and connects the web server to the Internet through the agents in the hosts.

Routing both the updates to the databases and the web server access to the Internet through the agent causes the bottleneck that the present invention avoids. Replacing the databases of Lara with the Bradley storage network does nothing to cure this problem, nor does Lara or Bradley appear to even recognize this problem.

Accordingly, since the combination of Lara and Bradley does not disclose or appear to suggest all of the subject matter required in amended claim 5, Lara and Bradley do not render amended claim 5 obvious.

Claim 6 requires, in the manner set forth, transmitting the new data from the production server through the storage network to a first one of the storage devices. The Lara device updates data with the content distributor through the agents in the hosts. Replacing the Lara database with the storage network of Bradley would not change the manner in which the Lara content distributor sends updated information to the data storage devices. The combination of Lara and Bradley still would not transmit new data from the content distributor through the Bradley storage network, as such the combination of Lara and Bradley does not teach or appear to suggest all of the subject matter required in claim 6.

Claims 6 and 7 should be patentable in conjunction with amended claim 5 from which they directly and indirectly depend.

Claim 8 requires, in the manner set forth, sending a command, from the production server through the storage network, to the storage devices instructing the storage devices to form the first and other snapshot volumes of the current data.

Replacing the database of Lara with the storage network of Bradley still does not disclose or appear to suggest sending a command from the production server through the storage network to the storage devices instructing the storage devices to form the first and other snapshot volumes of the current data. The Lara content distributor is connected to the databases through the agents and replacing the Lara databases with the storage network of Bradley does not change this. Therefore the combination of Lara and Bradley cannot send a command from the content distributor to the storage

devices through the Bradley storage network. As such, the combination of Lara and Bradley do not render obvious claim 8.

Claim 9 requires, in the manner set forth, sending a command from the production server through the local network to the content servers instructing the content servers to service the data accesses from the first and other snapshot volumes of the current data.

Neither Lara nor Bradley appear to teach or suggest sending a command from a production server to content servers instructing the content servers to service the data accesses from snapshot volumes of current data. Bradley does not involve servicing data accesses or have a production server. In Lara, the agent directs the web server interface to intercept all requests for files that are changing. Requests for files that are not changing can be directed to the usual content area. Requests for files that are changing can instead be directed to the stable copy, while the new files are installed in the usual area. Lara paragraph [0079] Therefore, it is the agents in Lara that command which data the Web servers service data from, not the content distributor.

Accordingly, since neither Lara nor Bradley teach or appear to suggest all of the subject matter required in claim 9, Lara and Bradley do not render claim 9 obvious. In addition, claim 9 should be patentable in conjunction with claim 8 from which it depends.

Claim 10 requires, in the manner set forth, sending a command from the production server through the local network to the content servers instructing the content servers to service the data accesses from the new data on the storage devices.

As discussed above in conjunction with claim 9, neither Lara nor Bradley appear to teach or suggest sending a command from a production server to content servers instructing the content servers on what data to use to service data accesses. This function appears to be accomplished by the agents in the hosts in Lara, and Bradley does not involve production servers or Web page updating. Since neither Lara nor

Bradley appear to teach or suggest all of the subject matter required in claim 10, Lara and Bradley do not render claim 10 obvious.

Claim 11 requires transmitting the new data from the production server through the storage network to the storage device, bypassing a local network that is connected between the shared network and the content server.

Neither Lara nor Bradley appear to disclose or suggest transmitting new data from a production server through a storage network to a storage device, or bypassing a local network. Even if the Lara databases were replaced with the storage network of Bradley, the Lara content distributor still does not bypass a local network to transmit new data to a storage device because the Lara content distributor is still connected to the agent which connects to the storage.

Since neither Lara nor Bradley disclose or appear to suggest all of the subject matter required in claim 11, claim 11 should therefore be nonobvious. In addition, claim 11 should be patentable in conjunction with amended claim 5 from which it depends.

Amended Claim 12 requires, in the manner set forth, servicing the data accesses with the content server by reading the current data for the content from the primary volume on the storage device across the storage network and sending the current data through the shared network.

Neither Lara nor Bradley appear to teach or suggest servicing the data accesses with the content server by reading the current data for the content from the primary volume on the storage device across the storage network and sending the current data through the shared network. Nor does replacing the database of Lara with the storage network of Bradley provide the missing material because the combination of Lara and Bradley do not teach or appear to suggest a storage network between a storage device and a content server as is required for servicing data accesses with the content server by reading the current data for the content on the storage device across the storage network.

Since neither Lara nor Bradley separately or in combination appear to teach or suggest all of the subject matter required in amended claim 12, Lara and Bradley cannot render amended claim 12 obvious.

Claimed 13 should be patentable in conjunction with amended claim 12 from which it depends.

Conclusion

As a result of the amendments and remarks set forth above, it is believed that all pending claims in this application are in condition for allowance. Allowance is respectfully requested. The Examiner is requested to contact the undersigned by telephone to discuss any issues which may inhibit the immediate allowance of the claims.

Respectfully submitted,

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